

## **REMARKS**

In response to the above-identified Office Action (“Action”), Applicants traverse the Examiner’s rejection of the claims and seek reconsideration thereof. Claims 1, 5 and 8-35 are now pending in the present application. Claims 1, 8 and 10-28 remain withdrawn. Claims 5, 9 and 29-35 are rejected. In the instant response, claim 5 is amended, no claims are added and no claims are cancelled.

### **I. Claim Amendments**

Applicants respectfully submit herewith an amendment to claim 5. Claim 5 is amended to recite the elements of “forming a positive electrode by physically mixing a positive active material with an additive to prepare a positive active material composition, the positive active material being selected from the group consisting of lithiated transition metals, and the additive at least one oxide of Si, B, Ge, Ga, Ca, Sr and Ba or at least one of Si, Ga, Ge, Ca, Sr and Ba, coating the positive active material composition on a current collector after heat treating to place the positive active material in a uniform crystalline form; and drying the current collector coated with a positive active material slurry composition.” Support for the amendment to claim 5 may be found, for example, on page 8, lines 15-25 of the Application.

Applicants respectfully submit the amendment does not add new matter and is supported by the specification. Accordingly, Applicants respectfully request consideration and entry of the amendment to claim 5.

### **II. Claims Rejected Under 35 U.S.C. § 103**

A. In the outstanding Action, claims 5, 29, 30, 33 and 34 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,869,208 issued to Miyasaka (“Miyasaka”) in view of U.S. Patent No. 6,379,842 issued to Mayer (“Mayer”). Applicants respectfully traverse the rejections as follows.

To establish a *prima facie* case of obviousness, the Examiner must set forth “some articulated reasoning with some rational underpinning to support the conclusion of obviousness.”

See *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1396 (2007). In combining prior art elements to render the claimed combination of elements obvious, the Examiner must show that the results would have been predictable to one of ordinary skill in the art. See Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103, Section III(D), issued by the U.S. Patent and Trademark Office on October 10, 2007.

In regard to independent claim 5, Applicants respectfully submit Miyasaka and Mayer fail to disclose or render predictable at least the elements of “forming a positive electrode by physically mixing a positive active material with an additive to prepare a positive active material composition, the positive active material being selected from the group consisting of lithiated transition metals, and the additive at least one oxide of Si, B, Ge, Ga, Ca, Sr and Ba or at least one of Si, Ga, Ge, Ca, Sr and Ba, coating the positive active material composition on a current collector after heat treating to place the positive active material in a uniform crystalline form; and drying the current collector coated with a positive active material slurry composition” as recited in claim 5.

Miyasaka generally discloses a lithium ion secondary battery. See Miyasaka, Abstract. The Examiner alleges that Miyasaka discloses a mixture of lithiated transition metal compound, a powder metal, a carbon black conductive agent, binder and active material. See Action, page 3. The Examiner admits, however, that Miyasaka fails to disclose an electrode additive of at least one of Si, B, Ti, Ga, Ge, Ca, Mg, Sr and Ba, heat treating the positive active material and coating the active material after heating. The Examiner instead alleges that the Abstract of Mayer discloses employment of magnesium in lithium oxide electrode materials in the amount of 5% and, although not expressly disclosed by the cited prior art, the elements of heating and coating would have been obvious. Mayer generally discloses a mixed lithium manganese oxide and lithium nickel cobalt oxide positive electrode. See Mayer, Abstract.

As an initial matter, Applicants would like to clarify that claim 5 recites that the additive is at least one of Si, Ga, Ge, Ca, Sr and Ba. B, Ti and Mg are not recited as additives in the claim.

Applicants respectfully submit that Miyasaka and Mayer do not disclose that the additive is mixed with a positive active material to prepare a positive active material composition. Particularly, as noted by the Examiner, Mayer discloses the employment of magnesium in lithium oxide electrode materials in the amount of 5% and uses Mg as a doping element, rather than an additive to the composition. The doping element is doped to the positive active material, that is, M' and M'' are doping elements in the above formulas, whereas, the additive is not doped to the positive active material and is merely mixed with the positive active material in the present invention.

As a result, the method as disclosed in claim 5 may additionally use an additive such as Mg, if M' is Mg in the above formulas. The additive gives good thermal stability to the positive electrode compare to the doping element without the additive.

Thus, for at least the foregoing reasons, the combination of Miyasaka and Mayer fails to disclose or render predictable each and every element of claim 5. Since each of the elements of claim 5 are not found within the cited prior art, a *prima facie* case of obviousness may not be established. Applicants respectfully request reconsideration and withdrawal of the rejection of claim 5 under 35 U.S.C. §103 over Miyasaka and Mayer.

In regard to claims 29, 30, 33 and 34, these claims depend from claim 5 and incorporate the limitations thereof. Thus, for at least the reasons that claim 5 is not *prima facie* obvious over Miyasaka and Mayer, claims 29, 30, 33 and 34 are further not obvious over the prior art. Applicants respectfully request reconsideration and withdrawal of the rejection of claims 29, 30, 33 and 34 under 35 U.S.C. §103 over Miyasaka and Mayer.

**B.** In the outstanding Action, claims 5, 29, 30, 33 and 34 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,851,696 issued to Saidi et al. ("Saidi") in view of Mayer. Applicants respectfully traverse the rejections as follows.

In regard to independent claim 5, Applicants respectfully submit Saidi and Mayer fail to disclose or render predictable at least the elements of "forming a positive electrode by physically mixing a positive active material with an additive to prepare a positive active material composition, the positive active material being selected from the group consisting of lithiated

transition metals, and the additive at least one oxide of Si, B, Ge, Ga, Ca, Sr and Ba or at least one of Si, Ga, Ge, Ca, Sr and Ba, coating the positive active material composition on a current collector after heat treating to place the positive active material in a uniform crystalline form; and drying the current collector coated with a positive active material slurry composition” as recited in claim 5.

Saidi generally discloses a rechargeable lithium battery. See Saidi, Abstract. The Examiner alleges that Saidi discloses a mixture of a positive active material, a binder, a carbon conductive agent and an organic solvent. See Action, pages 5-6. The Examiner admits, however, that Saidi fails to disclose an electrode additive of at least one of Si, B, Ti, Ga, Ge, Ca, Mg, Sr and Ba and coating the electrode after heating. The Examiner instead alleges that the Abstract of Mayer discloses employment of silicon in lithium oxide electrode materials in the amount of 5% and, although not expressly disclosed by the cited prior art, the element of coating would have been obvious.

As previously discussed, claim 5 does not recite all of the above additives listed by the Examiner. In addition, for at least the reasons previously discussed, Mayer fails to disclose “forming a positive electrode by physically mixing a positive active material with an additive to prepare a positive active material composition, the positive active material being selected from the group consisting of lithiated transition metals, and the additive at least one oxide of Si, B, Ge, Ga, Ca, Sr and Ba or at least one of Si, Ga, Ge, Ca, Sr and Ba, coating the positive active material composition on a current collector after heat treating to place the positive active material in a uniform crystalline form; and drying the current collector coated with a positive active material slurry composition” as recited in claim 5. The Examiner has further not pointed to and Applicants are unable to discern a portion of Saidi curing the deficiencies of Mayer with respect to these elements. Thus, for at least the foregoing reasons, the combination of Saidi and Mayer fails to disclose or render predictable each and every element of claim 5. Since each of the elements of claim 5 are not found within the cited prior art, a *prima facie* case of obviousness may not be established. Applicants respectfully request reconsideration and withdrawal of the rejection of claim 5 under 35 U.S.C. § 103 over Saidi and Mayer.

In regard to claims 29, 30, 33 and 34, these claims depend from claim 5 and incorporate the limitations thereof. Thus, for at least the reasons that claim 5 is not *prima facie* obvious over Saidi and Mayer, claims 29, 30, 33 and 34 are further not obvious over the prior art. Applicants respectfully request reconsideration and withdrawal of the rejection of claims 29, 30, 33 and 34 under 35 U.S.C. §103 over Saidi and Mayer.

C. In the outstanding Action, claim 35 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Saidi in view of Mayer and further in view of U.S. Patent Publication No. 2001/0010807 issued to Matsubara ("Matsubara"). Applicants respectfully traverse the rejections as follows.

Claim 35 depends from claim 5 and incorporates the limitations thereof. For at least the reasons previously discussed, Saidi and Mayer fail to disclose "forming a positive electrode by physically mixing a positive active material with an additive to prepare a positive active material composition, the positive active material being selected from the group consisting of lithiated transition metals, and the additive at least one oxide of Si, B, Ge, Ga, Ca, Sr and Ba or at least one of Si, Ga, Ge, Ca, Sr and Ba, coating the positive active material composition on a current collector after heat treating to place the positive active material in a uniform crystalline form; and drying the current collector coated with a positive active material slurry composition" as recited in claim 5. The Examiner has not pointed to, and Applicants are unable to discern, a portion of Matsubara curing the deficiencies of Saidi and Mayer with respect to at least these elements. Since each of the elements of claim 35 are not found within the prior art, a *prima facie* case of obviousness may not be established. Applicants respectfully request reconsideration and withdrawal of the rejection of claim 35 under 35 U.S.C. §103 over Saidi, Mayer and Matsubara.

D. In the outstanding Action, claims 5, 9 and 29-32 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,589,694 issued to Goshō et al. ("Goshō") and further in view of and further in view of Mayer. Applicants respectfully traverse the rejections as follows.

In regard to independent claim 5, Applicants respectfully submit that for at least the reasons previously discussed, Mayer fails to disclose or render predictable at least the elements of

fail to disclose “forming a positive electrode by physically mixing a positive active material with an additive to prepare a positive active material composition, the positive active material being selected from the group consisting of lithiated transition metals, and the additive at least one oxide of Si, B, Ge, Ga, Ca, Sr and Ba or at least one of Si, Ga, Ge, Ca, Sr and Ba, coating the positive active material composition on a current collector after heat treating to place the positive active material in a uniform crystalline form; and drying the current collector coated with a positive active material slurry composition” as recited in claim 5. The Examiner has further not pointed to and Applicants are unable to discern, a portion of Gosho curing the deficiencies of Mayer with respect to each of these elements. Thus, for at least the foregoing reasons, the combination of Gosho and Mayer fails to disclose or render predictable each and every element of claim 5. Since each of the elements of claim 5 are not found within the cited prior art, a *prima facie* case of obviousness may not be established. Applicants respectfully request reconsideration and withdrawal of the rejection of claim 5 under 35 U.S.C. §103 over Gosho and Mayer.

In regard to claims 9 and 29-32, these claims depend from claim 5 and incorporate the limitations thereof. Thus, for at least the reasons that claim 5 is not *prima facie* obvious over Gosho and Mayer, claims 9 and 29-32 are further not obvious over the prior art. Applicants respectfully request reconsideration and withdrawal of the rejection of claims 9 and 29-32 under 35 U.S.C. §103 over Gosho and Mayer.

### **III. Information Disclosure Statement**

Applicants respectfully submit that upon review of the file, Applicants noticed that the reference listed in the Information Disclosure Statement (IDS) Form dated March 3, 2004 has not been acknowledged by the Examiner. A copy of the as filed IDS is enclosed herewith for the Examiner’s review. Applicants respectfully request that the Examiner consider the reference and that the IDS Form be initialed by the Examiner to indicate such consideration and a copy thereof be returned to Applicants.

### CONCLUSION

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record, and are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 207 3800.

Respectfully submitted,

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#### **CERTIFICATE OF TRANSMISSION**

I hereby certify that this correspondence is being submitted electronically via EFS Web to the United States Patent and Trademark Office on June 25, 2008.

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